

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

690 Walnut Ave. St. 150

Vallejo, CA 94592-1133

(707) 649-5453

(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004822**Date Inspected:** 27-Nov-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG & Tower**Summary of Items Observed:**

The Caltrans (CT) Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower and Orthotropic Box Girders (OBG).

**OBG Sub-Assembly Bay 1:**

The QA Inspector randomly observed 2 Magnetic Drill Operators drilling bolt holes in U-Ribs U-145, U-146, U-147, and U-148 prior to forming.

The QA Inspector randomly observed ZPMC welders ID Numbers 201840/059400 and 059403/201788, utilizing the Submerged Arc Welding (SAW) Process in 2G/2F Positions on Gantry 1 with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2342-U-1(U-Rib)-4, to weld the U-Ribs to Deck Plate 9AW-DP095-001 Weld Joint (WJ) Numbers 001/002 and 005/006. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 682/687 amps, 25.2/25.1 volts WJ's 001/002 and 680/685 amps, 24.9/25.3 volts WJ's 005/006 with a travel speed of 512 millimeters (mm) per minute. Weld parameters appeared to comply with contract requirements.

**OBG Sub-Assembly Bay 2:**

The QA Inspector randomly observed 9 Magnetic Drill Operators drilling bolt holes in Skin Plate Stiffeners A709 HPS 485 piece mark A571 (E), A572 (E), A573 (E), A574 (E) and A709 Gr 345T2 p708 and p686.

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

### OBG Sub-Assembly Bay 3:

The QA Inspector randomly observed ZPMC welders Sun Ti Yu ID Number 054459 and Liu Zhi Hong ID 062447, utilizing the Flux Cored Arc Welding (FCAW) Process in 2F Position on Gantry 2 with ZPMC WPS WPS-B-T-2132-3, to weld simultaneously the I-Ribs to Edge Plate EP089-001 WJ's 001/002 and EP057-001 WJ's 005/006. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 311/307 amps, 28.6/29.3 volts WJ's 001/002 and 309/303 amps, 29.2/28.8 volts WJ's 005/006 with a travel speed of 450 mm per minute. Weld parameters appeared to comply with contract requirements.

### OBG Bay 4:

The QA Inspector randomly observed ZPMC welder ID 046830, utilizing the SAW Process in 1G Position 1 with ZPMC WPS WPS-B-T-3221-B-U3c-S-1, to weld a butt splice between 77M Lower Tower Diaphragm SA425 Sections SA425 and p1556 at WJ's WSD1-SA425-3A and WSD1-SA-4A. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements. The attached photographs provide additional detail.

The QA Inspector randomly observed ZPMC NDT Technician Cai Xin Xin, utilizing the Magnetic Particle Testing (MT) Method to perform a final MT examination on the cover pass of the fillet welds on Edge Plates EP90A Yellow Tag 001937 (EP090-001) Location 7BE-B3 WJ's 001 through 004, EP60A Yellow Tag 001938 (EP060-001) Location 7DW-B3 WJ's 001 through 04, EP91A Yellow Tag 001936 (EP065-001) Location 7CW-B3 WJ's 001 through 004 and Side Plate SP460A Yellow Tag 001932 (SP460-001) Location 8CE-E8 WJ's 001 through 010 and 076 through 085. There appeared to be no indications and ZPMC QC accepted all the above listed welds.

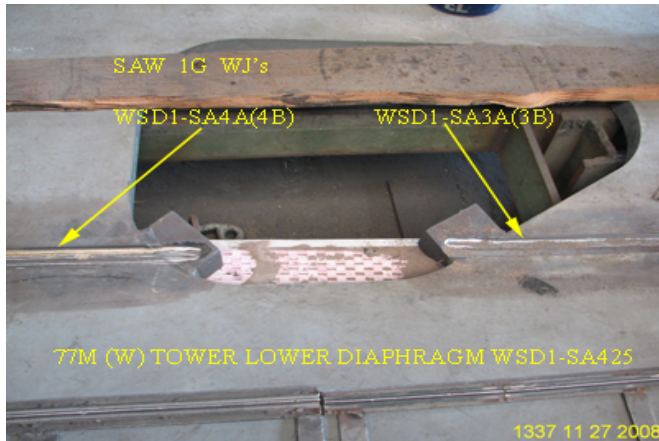
The QA Inspector performed a 100% final Visual Testing (VT) and 10% MT verification on the cover pass of the fillet welds on Edge Plates EP90A Yellow Tag 001937/Green Tag 001950 (EP090-001) Location 7BE-B3 WJ's 001 through 004, EP60A Yellow Tag 001938/Green Tag 001949 (EP060-001) Location 7DW-B3 WJ's 001 through 04, EP91A Yellow Tag 001936/Green Tag 001951 (EP065-001) Location 7CW-B3 WJ's 001 through 004 and Side Plate SP460A Yellow Tag 001932/Green Tag 001948 (SP460-001) Location 8CE-E8 WJ's 001 through 010 and 076 through 085. There appeared to be no indications and the QA Inspector accepted all the above listed welds.

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---



### Summary of Conversations:

As noted in the above body of this report.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Peter Dautermann, 15002199593, who represents the Office of Structural Materials for your project.

---

**Inspected By:** Franco,Charlie

Quality Assurance Inspector

---

**Reviewed By:** Wright,Mark

QA Reviewer